

Quadratics 1

1) Expand each expression below

- a) $(x + 7)(x + 3)$
- b) $(3x + 2)(x - 4)$
- c) $2(x + 3)(x - \frac{1}{2})$

2) Factor each expression below

- a) $x^2 + 9x + 20$
- b) $x^2 - 3x - 18$
- c) $2x^2 + 10x + 12$

3) Solve for x in each equation below algebraically then check graphically.

- a) $3(x - 2)^2 = 27$
- b) $2(x + 2)^2 - 4 = 0$
- c) $(x - 3)(x + 4) = 0$
- d) $4(2x + 2)(x + 2) = 0$

4) Find the x-intercepts, y-intercepts, and the vertex of each quadratic equation below algebraically then check graphically.

- a) $y = (x + 2)(x - 4)$
- b) $y = 2(x - 3)(x + 1)$
- c) $y = 3(x + 3)(x - 3)$
- d) $y = -3(x - 1)(x + 2)$

5) Solve for x and find the vertex of each quadratic below algebraically then check graphically.

- a) $x^2 + 8x + 15 = 0$
- b) $x^2 - 8x + 12 = 0$
- c) $2x^2 + 10x + 12 = 0$
- d) $x^2 - 3x + 6 = 0$